REMARKS

The Present Application was submitted to the U.S. Patent and Trademark Office on 24 July 2006. By this Response, Claims 1, 3-8, 10-4, 16 and 19-20 remain pending in the Present Application.

In the 18 February 2009 Communication, the Examiner rejected Claims 1, 3-4, 7-8, 11-4 and 16 as being anticipated, under 35 U.S.C. § 102(e), by U.S. Patent No. 7,251,406 to Luo *et al.* ("*Luo*"). Additionally, the Examiner rejected Claims 5-6, 10 and 19-20 as being unpatentable over *Luo* (in which the Examiner took official notice of the limitations in the Claims).

Luo purports to disclose an optical device including a single-mode waveguide supporting a first optical mode in a first region and a second optical mode in a second region. The waveguide includes a guiding layer. The guiding layer includes upper and lower portions, which decrease in width along the length of the guiding layer. In another embodiment, the guiding layer has at least one wing extending outwardly therefrom. Like the upper and lower portions of the guiding layer, the width of the wings also decreases along the length of the guiding layer.

However, as described and illustrated in *Luo*, the decrease of the upper and lower portions of the guiding layer, as well as the wings, are not in a smooth, uniform and horizontal taper between the first end and the second end of the guiding layer, as required by the Independent Claims of the Present Application, which have been amended to more clearly indicate this limitation. As best illustrated by Figures 2a and 2b of *Luo*, the upper and lower portions of the guiding layer, represented by numerals 206 and 207, do not decrease in smooth, uniform and horizontal width through the

entirety of the guiding layer. Rather, as most clearly shown by Figure 2b, the width, illustrated by w_g, extends from one end of the guiding layer and continues at width w_g until the lower portion of waveguide (206) illustrates a reduction in width from w_g to w_2 at an angle θ_1. Thus, Figure 2b illustrates two widths – one static and one decreasing.

Further, the decreasing width itself is split into two different decreasing widths. As set forth at col. 7, lines 43-6, "[a]s shown in FIG. 2(b), as the guiding layer 203 tapers, the lower portion 206 is at a first angle, θ_1, relative to the edge of waveguide 203; and the upper portion 207 at a second angle, θ_2, again relative to the edge of waveguide 203." Thus, Figure 2b, in fact, illustrates three different widths – one static, one decreasing at a first angle and one decreasing at a second angle.

These widths run contrary to that which is specifically required by the Independent Claims of the Present Application, as amended. As illustrated most clearly in Figure 3, the singular width of the core decreases from w_1 to w_2 in a uniform manner, *i.e.*, in one, single continuous decreasing line. As a result, Applicants respectfully assert that the disclosure of Luo does not anticipate the Independent Claims of the Present Application, as amended, and, additionally, the Dependent Claims.

In light of the Remarks and Amendments presented herein, Applicants respectfully assert that this Response overcomes the latest rejections, and places the Present Application in condition for allowance. Accordingly, Applicants requests as such. Should the Examiner not agree, or have any further questions, the Examiner is requested to contact Applicants's undersigned representative.

Date: 23 July 2009

Respectfully submitted,

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